Since the Imidazolinium ion (Im^+) affects the wet end charge demand and imparts softness to the tissue, it is useful to compare the debonding abilities of the formulations in retained Im^+, as in **Figure 3** which is a plot of percent change in dry breaking length vs. actual retained Im^+. According to the data in **Figure 3** the order of debonding ability is L = M > K > N.

In practice, the user will be concerned with the as-received add-on and not pure Im^+. The actual retained as-received formulation is shown in **Figure 4**. We see that, except for possibly formulation M, all the formulations fall on the same curve. Since the PEG-200-diester provides equal debonding at less quat add-on, one can attain more debonding with higher doses of formulation L without impacting furnish charge demand; that is, formulation L allows us to move further down the curve. Similarly because formulation K contains some PEG-200-diester, it allows one to move further down the curve than possible with pure imidazolinium (i.e., formulation N). It is unclear whether formulation M actually falls on a new curve below the main curve. If so, greater debonding is expected with M than the other formulations at equal dosages.

While lauramine oxide is effective at increasing fiber debonding, it nevertheless competes with the imidazolinium quat for sites on the fibers. This is disadvantageous as lauramine oxide is not as an effective softener as the imidazolinium quat.

Surprisingly, it has been found the ability of the synergistic quaternary ammonium/nonionic surfactant debonding compositions to reduce tensile correlates with the hydrophilic lypophilic balance (HLB) of the nonionic surfactant employed in connection with the process.